UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,153	09/12/2006	Christian Jentgens	5763	6822

26936 7590 07/20/2010

SHOEMAKER AND MATTARE, LTD
10 POST OFFICE ROAD - SUITE 100
SILVER SPRING, MD 20910

EXAMINER	
WEDDLE, ALEXANDER MARION	
ART UNIT	PAPER NUMBER
1714	
MAIL DATE	DELIVERY MODE
07/20/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/558,153	JENTGENS ET AL.	
	Examiner	Art Unit	
	ALEXANDER WEDDLE	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19,20,22,24-28 and 30-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19,20,22,24-28 and 30-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 9, 2010 has been entered.

Response to Arguments

2. The cancellation of Claim 41 has rendered moot the rejection of Claim 41 under 35 U.S.C. 102/103. The rejection of Claim 41 under 35 U.S.C. 102/103 of January 09, 2009 is therefore withdrawn.

3. The cancellation of Claim 42 has rendered moot the rejection of Claim 42 under 35 U.S.C. 101 and 35 U.S.C. 112. The rejection under 35 U.S.C. 101 and 35 U.S.C. 112 of January 09, 2009 is therefore withdrawn.

4. Claims 24-28 and 30-34 have been amended to overcome the previous objection under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. The objection under 37 CFR 1.75(c) of 12 January 2010 is therefore withdrawn.

5. Applicant's arguments filed 09 April 2010 have been fully considered but they are not persuasive.

In reply to Applicant's arguments that Rhodes is not a proper reference, because it relates to a completely different technical field (p. 8, first and second paragraphs), it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Rhodes is reasonably pertinent to the particular problem with which the applicant was concerned: maintaining a material at a desired temperature in a process as the material passes through a heated die.

In response to applicant's arguments against the references individually (p. 8, second and third paragraphs), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to Applicant's argument that because Rhodes does not disclose a rotating die, a person of ordinary skill in the art would not have modified Monzinger with the heated die of Rhodes, or would have modified Monzinger only by providing an additional stationary heated die. Examiner disagrees; because Monzinger teaches a rotating die and Rhodes suggests that a die may itself be heated to maintain the temperature of a material passing through it, a person of ordinary skill in the art would as likely have recognized that the Monzinger process, which provides a rotating die,

would benefit by using a rotating die which is also heated in order to maintain the temperature of the material(s) passing through it at the desired temperature.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 19, 20, 24-28, and 31-34, and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montsinger (WO 02/076706) in view of Staheli (US 6,838,123), and further in view of Rhodes, Jr. et al. (US 5,326,524).

Regarding Claim 19, Montsinger (WO'706) teaches a method of producing compressed, plastic-coated fibers or rovings (p. 2, lines 24-29), consisting of substantially parallel ("unidirectionally aligned fibers") (p. 10, lines 13-19; Fig. 9, elements 12), comprising the steps of coating rovings with plastic in a coating device , then passing the coated rovings, or a plurality of coated rovings as a composite, consisting of substantially parallel filaments on which the plastic applied is present in a molten or liquid state, through a rotating device by means of which local rotation of the fibers is executed which twists the individual threads with one another in the form of rotations (p. 3, lines 11-12; p. 7 line 21 to p. 8, line 22; Fig. 3, 6, and 9, elements "Fiber," 12, 23, "Strand"). The rotation of the filaments by a rotating sizing die ("exit die") (Abstract; p. 6, lines 15-32) causes the threads to rotate backwards along the threads in the direction of the coating device (p. 7, line 32 to p. 8, line 3; Fig. 3, elements 12, and 15, 22); the rotating exit die sizes the filaments - i.e., regulates the amount of polymer that is pulled out of a die by the fiber, thereby sizing the fibers or rovings (p. 6, lines 17-18). The rovings are compressed (page 8, lines 18-21).

WO'706 is silent as to a fluidized bed bath. Saheli (US'123) teaches a method for coating fibers as fiber strands by applying a powder in a fluidized bed bath (Abstract; col. 2, lines 14-21; col. 3, lines 12-20; col. 4, line 64 to col. 5, line11). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the

process of WO'706 with a step of coating the fibers in a dry coating method in a fluidized-bed bath, because US'123 teaches that the step allows coating constituents to be applied directly without previous compounding and dissociation of individual constituents is avoided (Abstract).

WO'706 further teaches that the polymer coating of the fiber is in a heated liquid state; WO'706 in view of US'123 is silent as to whether the sizing die is a heated a die to at least the melting point of the fiber coating (p.6, lines 10-32). Rhodes, Jr. et al. (US'524) teaches a method for making plastic rods reinforced with fiber rovings by rotating the fiber rovings before entering a heated die (col. 6, lines 51-62). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of WO'706 in view of US'123 by heating the sizing die, because US'524 teaches that heated dies are suitable for coating rovings, and such person would have recognized the benefit of maintaining the fiber coating at its melting point to improve the flow of the fiber coating through the die and onto the fiber.

Regarding Claim 24, WO'706 teaches that rotational speeds may vary from 0 to 10,000 rpm (p. 8, lines 6-7). WO'706 fails to teach that the high speed will spin off all excess coating material at the die edge. It would have been obvious to a person of ordinary skill in the art at the time of invention to spin the die at a sufficiently high rotational speed to spin of all excess material at the die edge in order to prevent clogging of the die, promote uniform coating, to allow collection and recycling of coating material, and to maintain a clean die.

Regarding Claim 25, WO'706 teaches the step of rotating the exit die about the axis of the filaments and/or rotating the fiber within the exit die, and apparently discloses a rotating sizing die fixed in a hollow shaft and rotated together with the hollow shaft (Fig. 3, 6, elements 22, 23, 24, 32; p. 6, line 25 to page 7, line 25).

Regarding Claims 26-28, WO'706 teaches that rotational speeds may vary from 0 to 10,000 rpm (p. 8, lines 6-7).

Regarding Claims 20 and 31-34, WO'706 teaches that the rotating exit die sizes the fiber (col. 6, lines 17-18). Further, the length/diameter ratio of the die may be varied from 0.01 to 1000 (p. 6, lines 31-32). WO'706 provides trial summary data in Table 1 with trial die diameters from 0.136 inches to 0.25 inches. WO'706 fails to teach the specific diameters recited in the claims. The internal diameter of the sizing die and the size of the threads are result-effective variable, because the diameter of the die is known in the prior art to affect the diameter of the resulting fibers and the size of the fiber to affect the final product. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify US'706 by determining optimal dimensions as a result of routine optimization.

Regarding Claim 36, WO'706 suggests that after leaving the rotating device, the roving consists of substantially parallel filaments (Figs. 6 and 9).

Regarding Claim 37, WO'706 teaches producing rovings of glass, carbon, metal, and/ or organic filaments (Claim 26).

Regarding Claim 38, the combination of references fails to teach that the thermoplastic material has a softening point of 100 degrees Celsius or higher. The

softening point of a thermoplastic material is a result-effective variable, because the at the time of the invention the person of ordinary skill in the art would have recognized that the softening point will affect the ability of the roving to withstand thermal and mechanical stresses. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references by determining the optimal thermoplastic material as a result of routine optimization.

Regarding Claim 39, WO'706 fails to teach the recited plastics. Staheli (US'123) teaches coating rovings with curable polycondensates and polyadducts (col. 3, lines 32-40). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify WO'706 by using a thermosetting plastics as taught by US'123, because US'123 teaches that thermosets are useful to give the rovings excellent mechanical properties (Abstract; Examples 1 and 2, col. 5, line 65 to col. 6, line 41).

The combination of references fails to teach a method wherein the fibers are coated with at least one thermosetting polycondensate and at least one thermosetting polyadduct. However, it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.

10. Claims 22 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montsinger (WO 02/076706) in view of Staheli (US 6,838,123) and Rhodes, Jr. et al. (US 5,326,524) as applied to Claim 19 above, and further in view of Tsotsis (US 6,074,716).

Regarding Claims 22 and 40, WO'706 teaches producing rovings of glass, carbon, metal, and/ or organic filaments (Claim 26). WO'706 is silent as to coating the additional mineral powders or metal powders. US'123 teaches an aftercoating operation in order to double the filament weights by adding mineral content (col. 5, lines 1-5). The combination of references is silent as to coating the rovings with a material selected from the group consisting of mineral powders [and] metal powders. Tsotsis (US'716) teaches a metal matrix impregnated tow composite material in which a roving of fibers is impregnated with metal powder (col. 2, lines 63-67). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references by impregnating the molten coating plastic with metal powder, because US'716 teaches that metal powder lends a roving high mechanical and thermal properties and resistance to solvents (col. 2, lines 3-18).

Further regarding Claim 40, the combination of references fails to teach the average particle size of the metal powder. The particle size of metal powder is a result-effective variable, because it affects the packing density and thus the mechanical and solvent resistant properties of the roving. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references by determining the optimum particle size as a result of routine optimization.

11. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Montsinger (WO 02/076706) in view of Staheli (US 6,838,123) and Rhodes, Jr. et al.

(US 5,326,524) as applied to Claim 19 above, and further in view of Schmidt et al. (US 2005/0051924).

US'706 teaches using a plurality of dies in parallel, but does not teach connecting a plurality of rotating sizing dies in series. The combination of references is silent as to a series of rotating sizing dies. Schmidt et al. (US'924) teaches a process of making extruded knit materials in a continuous manner by extruding three or more polymeric filaments into a functional knit material for bale wrap, cargo wrap and nets (Abstract). US'924 teaches that the rotary die assembly in series allows the extruded filaments to become intermingled and interlocked (Abstract). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of the combination of references by substituting the rotary die assembly connected in series taught by US'924 for the parallel die assembly of US'706 to yield predictable results, because US'924 teaches that such an assembly is suitable to extrude continuous filaments of polymers such as those used in the process of US'924 and to vary the cross section of continuously extruded filaments (pars. 0033, 0034).

12. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Montsinger (WO 02/076706) in view of Staheli (US 6,838,123) and Rhodes, Jr. et al. (US 5,326,524) as applied to Claim 19 above, and further in view of Eaton et al. (WO 02/087840).

Regarding Claim 35, the combination of references is silent as to the number of spiral revolutions. WO'840 teaches that a roving may 45-47 spiral revolutions ("turns" or "twists") per meter. Examiner believes that the limitation that the spiral revolutions will

inherently occur backward in the direction of the coating device, because of the angular stress or torsion placed on the roving. It would have been obvious to a person of ordinary skill in the art at the time of invention to practice the process of the combination of references by twisting the roving in the recited number of spiral revolutions because WO'840 suggests that the a number of twists within the range of revolutions is adequate for certain applications as a matter of design choice and can be obtained with a reasonable expectation of success.

Additionally, it is the Examiner's opinion that the resultant filaments will be inherently compressed by the torsion on the threads while twisting or rotating, as evidenced by Montsinger (WO 02/076706) at page 8, lines 18-21.

Conclusion

13. No Claim is allowed.

14. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER WEDDLE whose telephone number is (571) 270-5346. The examiner can normally be reached on Monday-Thursday, 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. W./
Examiner, Art Unit 1714
/Michael Kornakov/
Supervisory Patent Examiner, Art Unit 1714